Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (previously presented): A method for storing data on a storage medium comprising a magnetic disk, the method comprising:

writing the data to the storage medium in which the spacing between adjacent magnetized locations of the magnetic disk is smaller than 50nm whereby the data for a recording density is written at greater than 500 kFCI (19685 kFCm) so as to cause spontaneous degradation of the data over time;

automatically reading the data periodically;

generating a refresh indicator value and checking if the refresh indicator satisfies a predetermined condition related to degradation of the data over time; and

writing the data a second time only if said predetermined condition is satisfied.

Claims 2-32 (canceled).

Claim 33 (previously presented): A method according to claim 1, further comprising:

writing the data to the storage medium with a grain diameter below 100 Å.

Claim 34 (previously presented): A method according to claim 1, further comprising writing the data to the storage medium with an energy ratio below 50 KuV/KBT at room temperature.

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Claim 35 (previously presented): A method according to any one of claims 1, 33 and 34 comprising estimating an expected time to occurrence of a hard error by any one or more of the steps of (a) checking if the readback signal has fallen to at least 88% of its original amplitude, (b) empirically determining the duration of operation without errors on a test disk, and using this error free duration to generate and store a refresh date, (c) determining the occurrence of a predetermined number of soft errors.

Claim 36 (previously presented): A method according to any one of claims 1, 33 and 34, the method further comprising:

writing the data to the magnetic disk, at least a portion of the data being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of time; and

automatically refreshing at least the portion of data, using the refresh indicator.

Claim 37 (previously presented): A method according to claim 36 comprising automatically refreshing at least the portion of data, using at least two refresh indicators.

Claim 38 (previously presented): The method of any one of claims 1, 33 and 34 further comprising writing the refresh indicator to a location in the storage medium distinct from another location used to write data.

Claim 39 (previously presented): The method of claim 38 further comprising using a date of performance of said "writing the data to the storage medium" to determine the refresh indicator.

Claim 40 (previously presented): The method of claim 39 wherein:

said using includes setting the refresh indicator to be said date; and

said predetermined condition is satisfied when said refresh indicator is older than a current date by a predetermined time period.

Claim 41 (previously presented): The method of claim 39 wherein:

said determining includes setting the refresh indicator to be a refresh date obtained by adding a predetermined time period to said date; and

said predetermined condition is satisfied when said refresh date is older than a current date.

Claim 42 (previously presented): The method of any one of claims 1, 33 and 34 further comprising:

determining, subsequent to said writing, a difference between a first value of the refresh indicator determined contemporaneous with said writing and a second value of the refresh indicator determined at a current time;

wherein said predetermined condition is satisfied when said difference is greater than a predetermined limit.

Claim 43 (previously presented): The method of any one of claims 1, 33 and 34 further comprising using an amplitude of a readback signal of the data as the refresh indicator.

Claim 44 (previously presented): The method of claim 43 wherein said amplitude is hereinafter "first amplitude" and the method further comprises:

writing the first amplitude to a location in the storage medium distinct from another location used to write the data;

measuring a second amplitude of the readback signal contemporaneous with said checking; and

said checking includes determining a difference between the second amplitude and the first amplitude.

Claim 45 (previously presented): The method of claim 44 wherein said checking further comprises comparing said difference with a predetermined limit. ·

Claim 46 (previously presented): The method of claim 45 wherein said checking further comprises comparing a percentage value of said difference with a predetermined percentage.

Claim 47 (previously presented): The method of claims 1, 33 and 34 wherein the checking is performed periodically without scanning the entire storage medium.

Claim 48 (previously presented): The method of claims 1, 33 and 34 wherein the refresh indicator is saved contemporaneous with said writing.

Claim 49 (previously presented): The method of claims 1, 33 and 34 wherein said "automatically reading the data" and said "writing the data a second time" are both performed periodically.

Claim 50 (previously presented): The method of claims 1, 33 and 34 wherein said "automatically reading the data" and said "writing the data a second time" are both performed on a schedule for all the data.

Claim 51 (previously presented): The method of claim 50 wherein said schedule is periodic.

Claim 52 (previously presented): A storage medium comprising a disk carrying data and having at least one property selected from a group of properties consisting of (a) spacing between adjacent magnetised locations of the magnetic disk less than 50 nm (b) recording density for the data greater than 500 kFCl (19685 kFCm) (c) grain diameter less than 100 Å and (d) energy ratio less than 50 KuV/KBT so as to cause spontaneous degradation over time; the disk further carrying a refresh indicator that indicates a predetermined condition related to degradation of the data over time.

Claim 53 (previously presented): The storage medium of claim 52 wherein:

the data is held on file; and

the refresh indicator is stored as an attribute of the file.

Claim 54 (previously presented): The storage medium of claim 52 or 53 wherein the attribute is stored in a directory entry of a file system.

Claim 55 (previously presented): The storage medium of claim 52 or 53 wherein the refresh indicator is based on a time when the data were most recently written.

Claim 56 (previously presented): The storage medium of any one of claims 52 and 53 wherein the refresh indicator is based on an amplitude of a readback signal of the data at the time of writing the data.

Claim 57 (previously presented): The storage medium of any one of claims 52 and 53 wherein the data is held as polarity of magnetized portion of the storage medium.

Claim 58 (currently amended): A carrier signal embedded with:

computer instructions for writing data to a magnetic medium, wherein the spacing between adjacent magnetised locations of the magnetic medium is smaller than 50 nm and the recording density is greater than 500kFCI (19685 kFCm); and

a refresh indicator that indicates a predetermined degradation of the data.

Claim 59 (previously presented): The carrier signal of claim 58 wherein the refresh indicator is based on a time when the data were most recently written.

Claim 60 (previously presented): The carrier signal of claim 58 wherein the refresh indicator is based on an amplitude of a readback signal of the data at the time of writing the data.

Claim 61 (previously presented): An apparatus including:

a storage medium embedded with data at a density sufficiently high to spontaneously undergo thermal degradation with passage of time wherein the spacing between adjacent magnetised locations of the medium is smaller than 50 nm and the recording density is greater than 500KFCI (19685 kFCm); and

an electronic device coupled to the storage medium to perform a refresh operation on the data when the data satisfy a predetermined condition related to the thermal degradation.

Claim 62 (previously presented): The apparatus of claim 61 wherein the predetermined condition is based on a time when the data were most recently written.

Claim 63 (previously presented): The apparatus of claim 61 wherein the predetermined condition is based on an amplitude of a readback signal of the data at the time of writing the data.

Claim 64 (previously presented): A storage medium embedded with computer instructions for:

writing data to a magnetic medium wherein the spacing between adjacent magnetised locations of the medium is smaller than 50 nm and the recording density is greater than 500kFCI (19685 kFCm); and

automatically reading the data and writing the data back to the magnetic medium without scanning the magnetic medium.

Claim 65 (previously presented): The storage medium of claim 64 wherein:

during each writing the data are recorded at a density sufficiently high to spontaneously undergo thermal degradation with passage of time; and

the computer instructions include checking if a refresh indicator satisfies a predetermined condition related to degradation of the data over time.

Claim 66 (previously presented): A carrier signal embedded with computer instructions for:

writing data to a magnetic medium wherein the spacing between adjacent magnetised locations of the medium is smaller than 50 nm and the recording density is greater than 500kFCl (19685 kFCm); and

automatically reading the data and writing the data back to the magnetic medium without scanning the magnetic medium.

Claim 67 (previously presented): The carrier signal of claim 66 wherein:

during each writing the data are recorded at a density sufficiently high to spontaneously undergo thermal degradation with passage of time; and

the computer instructions include checking if a refresh indicator satisfies a predetermined condition related to degradation of the data over time.

Claims 68-69 (canceled).

Claim 70 (currently amended): ~~The method of Claim 68 wherein:~~ A method for storing information on a magnetic disk, the method comprising:

writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and

automatically refreshing at least the portion of information, using a refresh indicator;

wherein the diameter of at least one grain in the group of grains is less than 100 angstroms.

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Claim 71 (currently amended): ~~The method of Claim 68 wherein:~~ <u>A method for storing information on a magnetic disk, the method comprising:</u>

<u>writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and</u>

<u>automatically refreshing at least the portion of information, using a refresh indicator;</u>

<u>wherein</u> a transition in polarity between neighboring magnetized portions is less than ~~a few grain diameters~~ <u>250 Å</u>.

Claims 72-76 (canceled).

Claim 77 (currently amended): ~~The method of Claim 68 wherein:~~ <u>A method for storing information on a magnetic disk, the method comprising:</u>

<u>writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and</u>

<u>automatically refreshing at least the portion of information, using a refresh indicator;</u>

<u>wherein</u> said refresh indicator indicates that the information in the magnetic disk contains a soft error.

Claim 78 (currently amended): ~~The method of Claim 68 wherein:~~ <u>A method for storing information on a magnetic disk, the method comprising:</u>

<u>writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and</u>

<u>automatically refreshing at least the portion of information, using a refresh indicator;</u>

<u>wherein</u> said refresh indicator satisfies a predetermined condition,~~ indicating that the information in the magnetic disk is about to contain at least one soft error~~.

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Claims 79-82 (canceled).

Claim 83 (currently amended): ~~The method of Claim 80 wherein:~~ A method for storing information on a magnetic disk, the method comprising:

writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and

automatically refreshing at least the portion of information, using at least two refresh indicators;

wherein at least one of the refresh indicators is related to a high-frequency component of a readback signal.

Claim 84 (currently amended): ~~The method of Claim 80 wherein:~~ A method for storing information on a magnetic disk, the method comprising:

writing the information to the magnetic disk, at least a portion of the information being written to a group of grains in a track at a density sufficiently high to cause a change in direction of magnetization of at least some of the grains with passage of a year; and

automatically refreshing at least the portion of information, using at least two refresh indicators;

wherein at least one of the refresh indicators is related to a number of errors.

Claim 85 (new): The method of Claim 1 wherein:

the refresh indicator is stored on the storage medium at a lower density than the data.

Claim 86 (new): The method of Claim 78 wherein:

the refresh indicator is stored on the magnetic disk at a lower density than the portion of the information.

Claim 87 (new): The method of Claim 77 wherein:

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the refresh indicator is stored on the magnetic disk at a lower density than the portion of the information.

Claim 88 (new): The method of Claim 71 wherein:

the refresh indicator is stored on the magnetic disk at a lower density than the portion of the information.

Claim 89 (new): The method of Claim 70 wherein:

the refresh indicator is stored on the magnetic disk at a lower density than the portion of the information.

Claim 90 (new): The storage medium of Claim 65 wherein the computer instructions further comprise:

storing the refresh indicator on the magnetic medium at a lower density than the data.

Claim 91 (new): The storage medium of Claim 52 wherein the refresh indicator is carried on the disk at a lower density than the data.